

§ 179.500-11

opening equal to twice the total discharge area of pressure relief device enclosed.

(b) [Reserved]

[29 FR 18995, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and amended at 66 FR 45390, Aug. 28, 2001; 67 FR 61016, Sept. 27, 2002]

§ 179.500-11 Loading and unloading valves.

(a) Loading and unloading valve or valves shall be mounted on the cover or threaded into the marked end of tank. These valves shall be of approved type, made of metal not subject to rapid deterioration by lading or in service, and shall withstand without leakage a pressure equal to the marked test pressure of tank. Provision shall be made for closing service outlet of valves.

(b) [Reserved]

§ 179.500-12 Pressure relief devices.

(a) Tank shall be equipped with one or more pressure relief devices of approved type and discharge area, mounted on the cover or threaded into the non-marked end of the tank. If fittings are mounted on a cover, they shall be of the flanged type, made of metal not subject to rapid deterioration by lading or in service. Total flow capacity shall be such that, with tank filled with air at pressure equal to 70 percent of the marked test pressure of tank, flow capacity will be sufficient to reduce air pressure to 30 percent of the marked test pressure within 3 minutes after pressure relief device opens.

(b) Pressure relief devices shall open at a pressure not exceeding the marked test pressure of tank and not less than $\frac{7}{10}$ of marked test pressure. (For tolerance for pressure relief valves, see § 179.500-16(a).)

(c) Cars used for the transportation of flammable gases shall have the safety devices equipped with an approved ignition device.

[Amdt. 179-32, 48 FR 27708, June 16, 1983, as amended at 66 FR 45391, Aug. 28, 2001; 68 FR 57634, Oct. 6, 2003]

§ 179.500-13 Fixtures.

(a) Attachments, other than those mounted on tank covers or serving as threaded closures for the ends of the tank, are prohibited.

(b) [Reserved]

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§ 179.500-14 Test of tanks.

(a) After heat-treatment, tanks shall be subjected to hydrostatic tests in a water jacket, or by other accurate method, operated so as to obtain reliable data. No tank shall have been subjected previously to internal pressure greater than 90 percent of the marked test pressure. Each tank shall be tested to a pressure at least equal to the marked test pressure of the tank. Pressure shall be maintained for 30 seconds, and sufficiently longer to insure complete expansion of tank. Pressure gauge shall permit reading to accuracy of one percent. Expansion gauge shall permit reading of total expansion to accuracy of one percent. Expansion shall be recorded in cubic cm.

(b) No leaks shall appear and permanent volumetric expansion shall not exceed 10 percent of the total volumetric expansion at test pressure.

§ 179.500-15 Handling of tanks failing in tests.

(a) Tanks rejected for failure in any of the tests prescribed may be reheated, and will be acceptable if subsequent to reheat-treatment they are subjected to and pass all of the tests.

(b) [Reserved]

§ 179.500-16 Tests of pressure relief devices.

(a) Pressure relief valves shall be tested by air or gas before being put into service. Valve shall open at pressure not exceeding the marked test pressure of tank and shall be vapor-tight at 80 percent of the marked test pressure. These limiting pressures shall not be affected by any auxiliary closure or other combination.

(b) For pressure relief devices that incorporate a rupture disc, samples of the discs used shall burst at a pressure not exceeding the marked test pressure of tank and not less than $\frac{7}{10}$ of marked test pressure.

[Amdt. 179-32, 48 FR 27708, June 16, 1983, as amended at 66 FR 45391, Aug. 28, 2001]

§ 179.500-17 Marking.

(a) Each tank shall be plainly and permanently marked, thus certifying that tank complies with all requirements of this specification. These

marks shall be stamped into the metal of necked-down section of tank at marked end, in letters and figures at least ¼ inch high, as follows:

(1) Spec. DOT-107A * * * *, the * * * * to be replaced by figures indicating marked test pressure of the tank. This pressure shall not exceed the calculated maximum marked test pressure permitted, as determined by the formula in § 179.500-4(b).

(2) Serial number immediately below the stamped mark specified in paragraph (a)(1) of this section.

(3) Inspector's official mark immediately below the stamped mark specified in paragraph (a)(1) of this section.

(4) Name, mark (other than trademark), or initials of company or person for whose use tank is being made, which shall be recorded with the Bureau of Explosives.

(5) Date (such as 1-01, for January 2001) of tank test, so placed that dates of subsequent tests may easily be added.

(6) Date (such as 1-01, for January 2001) of latest test of pressure relief device or of the rupture disc, required only when tank is used for transportation of flammable gases.

(b) [Reserved]

[29 FR 18995, Dec. 29, 1964, as amended by Amdt. 179-52, 61 FR 28682, June 5, 1996; 66 FR 45391, Aug. 28, 2001]

§ 179.500-18 Inspection and reports.

(a) Before a tank car is placed in service, the party assembling the completed car shall furnish to car owner, Bureau of Explosives, and the Secretary, Mechanical Division, Association of American Railroads, a report in proper form certifying that tanks and their equipment comply with all the requirements of this specification and including information as to serial numbers, dates of tests, and ownership marks on tanks mounted on car structure.

(b) Purchaser of tanks shall provide for inspection by a competent inspector as follows:

(1) Inspector shall carefully inspect all material and reject that not complying with § 179.500-5.

(2) Inspector shall stamp his official mark on each forging or seamless tube accepted by him for use in making

tanks, and shall verify proper application of heat number to such material by occasional inspections at steel manufacturer's plant.

(3) Inspector shall obtain certified chemical analysis of each heat of material.

(4) Inspector shall make inspection of inside surface of tanks before necking-down, to insure that no seams, cracks, laminations, or other defects exist.

(5) Inspector shall fully verify compliance with specification, verify heat treatment of tank as proper; obtain samples for all tests and check chemical analyses; witness all tests; and report minimum thickness of tank wall, maximum inside diameter, and calculated value of D, for each end of each tank as prescribed in § 179.500-4(c).

(6) Inspector shall stamp his official mark on each accepted tank immediately below serial number, and make certified report (see paragraph (c) of this section) to builder, to company or person for whose use tanks are being made, to builder of car structure on which tanks are to be mounted, to the Bureau of Explosives, and to the Secretary, Mechanical Division, Association of American Railroads.

(c) Inspector's report required herein shall be in the following form:

(Place) _____
(Date) _____

STEEL TANKS

It is hereby certified that drawings were submitted for these tanks under AAR Application for Approval _____ and approved by the AAR Committee on Tank Cars under date of _____.

Built for _____ Company

Location at _____

Built by _____ Company

Location at _____

Consigned to _____ Company

Location at _____

Quantity _____

Length (inches) _____

Outside diameter (inches) _____

Marks stamped into tank as required in § 179.500-17 are:

DOT-107A* * * *

NOTE 1: The marked test pressure substituted for the * * * * on each tank is shown on Record of General Data on Tanks attached hereto.

Serial numbers _____ to _____ inclusive
Inspector's mark _____